

SUPPLEMENTARY NOTES ON AMERICAN MENISPERMACEAE XVII

NEOTROPICAL TRICLISIEAE AND ANOMOSPERMEAE

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In Supplementary Notes #14 (16) I stated "Plants of Menispermaceae are among the most unsatisfactory creations of nature from the taxonomist's point of view. Flowers are very small and dioecious, and some genera can be told apart only on fruit and seed characters."

1. Work since 1937 to 1951 (incl.)

In collaboration with H. N. Moldenke, I started to work on this family in 1937. Previous to this, L. Diel's monograph published in 1910 (19) was the only compact treatment of the entire family. The progress of our studies can be seen from Table #1.

Table #1

Number of species known in:	<u>1910</u>	<u>1938</u>	<u>1970</u>
<u>Abuta</u>	14	17	23
<u>Anomospermum</u>	5	6	14
<u>Chondrodendron</u>	5	8	8
<u>Sciadotenia</u>	10	12	16
<u>Telitoxicum</u>	--	6	6
	<u>34</u>	<u>49</u>	<u>76</u>

Our main task in that period was getting fertile specimens collected and match up flowering material of the two sexes. As Rupert Barneby stated, the two tribes were in the state of a house kept in smart repair above ground but with neglected foundations.

2. Work of Rupert Barneby on Generic Segregation in 1970

The Supplementary Notes #8 (10) rectified this omission and started a new era after Barneby made a systematic generic survey stressing characters of the drupe and embryo, and we made keys, whenever possible one for each sex, to the species of each genus.

3. Data accumulated since 1971 to 1981 (incl.)

Since 1971, 896 new collections were examined (enormous amounts from the two tribes), 90 extensions of range were reported, 2 new genera, and 1 species were described, and many fruits and flowers (staminate and pistillate) became known. The purpose of this paper is to bring together in a single place the information scattered in Supplementary Notes #9 to 17 (inclusive) (11-18).

4. Extensions of Range

Under each species new ranges were compiled.

In addition, since 1963, whenever possible, I have worked a few days annually in each of many major herbaria in the U.S.A., Europe, and South America. As a result, there are practically no specimens that have not been annotated. I have deposited with the New York Herbarium two card files, one arranged by species, the other by collectors, of every specimen seen by us. This will greatly facilitate the work of a future monographer.

The discontinuous distribution, which would be rather unusual in another group of plants, should not distress those who work on the two tribes from which many examples could be cited; see Supplementary Notes #14 (16: 249-250).

5. New genera and species

- Supplementary Notes #9 - Abuta fluminum Krukoff & Barneby
 " " 10 - Elephantomene Barneby & Krukoff
 (new genus)
 " " 11 - Sciadotenia peruviana Krukoff &
 Barneby
Telitoxicum rodriguezii Krukoff
 " " 14 - Caryomene grandifolia Barneby &
 Krukoff
Anomospermum andersonii Krukoff
Cionomene Krukoff (new genus)
Telitoxicum negroense (Krukoff &
 Moldenke) Krukoff (new
 combination)
 " " 17 - Abuta chocoensis Krukoff & Barneby

6. Flowers (staminate and pistillate) and fruits
are described for the first time
(also important collections
are referred to)

- Supplementary Notes #9 - Telitoxicum minutiflorum -
 staminate flowers
Abuta brevifolia -
 staminate flowers
Orthomene verruculosa -
 staminate flowers
Chondrodendron microphyllum -
 fruits
Telitoxicum peruvianum -
 fruits
- " " 11 - Curarea cuatrecasasii (two
 important collections)
- " " 12 - Anomospermum matogrossense (two
 important collections)
- " " 13 - Reduction of "Abuta splendida" to
 the synonymy of A. rufescens
 Aublet
- " " 14 - Anomospermum reticulatum ssp.
idroboi (important collection)
Abuta steyermarkii -
 fruits

7. New species and where they are expected

Due to the extreme difficulties of collecting flowers, which is mentioned above, it is not surprising that we have accumulated specimens of ten species and four subspecies which are probably new but cannot be described because of insufficient material. In order to encourage further collections of these the localities are listed in Supplementary Notes #16 (18).

By now it is evident that tropical lowland forests of Venezuela, and of Amazonian Bolivia, Ecuador and Peru and the Chocó in Colombia are very rich in Menispermaceae. New species are expected particularly in genera Abuta, Sciadotenia, and Anomospermum.

8. Revisions of genera Cissampelos and Hyperbaena

It is satisfactory that Cissampelos and Hyperbaena were finally revised, the first by D. G. Rhodes (21) and the second by M. Mathias and W. L. Theobald (20).

9. Species of families other than Menispermaceae occasionally confused with Menispermaceae

Among numerous specimens of Menispermaceae which we received since 1937 for identification, specimens of Sparatanthelium (Gyrocarpaceae) and less frequently sterile specimens of Dioscorea (from Brazil only - not from Mexico or Central America) and Cucurbitaceae were occasionally sent as unknown Menispermaceae.

10. Chemical studies

For chemical studies carried out by various workers before 1970 see Supplementary Notes #6 (8: 4, 5, 70). Numerous authentic wood samples were accumulated largely in 1969 and 1970 (from G. Prance and his collectors, also from Nilo Silva in Brazil, J. Schunke in Peru and others). They were given in 1970 to Dr. Thomas H. Kinstle, at that time of Iowa State University. He never published anything, and failed to inform us what he did with our wood samples. Prof. Yasue Iwubushi of Kyoto University expressed his interest to work on woods of Menispermaceae and we sent him a set. His findings are quoted in Supplementary Notes #9 and 10 (11 and 12) and they were mostly negative. As is the case with T. Kinstle, the chemical work on woods of Menispermaceae apparently was found too difficult for his facilities. Most of the wood samples which we sent to him were returned and were given by us to Dr. Michael P. Cava. Papers by him and his coworkers are enumerated below (22, 23, 24, 25, and 26). Tertiary alkaloids of many members of the two tribes were found to have anti-tumor activity.

11. Species used in the preparation of curare and pharmacological and clinical studies

See Supplementary Notes #6 (8: 4-69).

12. Studies of Wood Anatomy

The extensive paper on the wood anatomy of the two tribes by A. M. W. Mennega is being rewritten to comply with the format of the Journal of Arnold Arboretum.

13. Studies of Pollen

For the study of pollen see paper by P. Thanikaimoni (27) and by I. K. Ferguson (28). The study appears to be promising as there are several types of pollen in species of these two tribes.

14. Studies of Chromosomes

Chromosomes of only four of the 16 New World genera of Menispermaceae (Calyccarpum, Menispermum, Cocculus, and Cissampelos) have been reported. In 1977 Dr. Gerald Carr of the University of Hawaii expressed his interest in studying chromosomes at the Pacific Tropical Garden on the basis of root tips of seedlings. Our correspondents in South America were requested to send freshly collected seeds to him for germination. It is interesting to mention that the first two batches of seeds were received from Dr. J. J. de Granville from French Guiana. They were of remarkable Elephantomene eburnea and Anomospermum sp. Seeds of these germinated four to five months after planting. I now will quote a letter from S. Lucas (Pacific Trop. Gard.) of March 6, 1981.

"You will be pleased to note that we have succeeded in germinating seeds of 800237 Abuta bullata Moldenke which is the first collection (Cremers 6191) of this species from French Guiana. The seeds were received here and planted on February 22, 1980, so it has taken fully one year for germination."

Therefore, in addition to the difficulties of collecting seeds of members of their two files, Dr. Carr is faced with that of delayed germination.

For routine identification of specimens of the two tribes, only two papers are needed - Supplementary Notes #8 wherein Barneby made generic definitions and this paper. By examining the present paper it is rather easy to find the Supplement in which more detailed information on specific subjects are presented.

In connection with preparation of the present paper 88 new collections were examined, extensions of range were noted for 17, and one species (Abuta choocoensis Krukoff & Barneby) is described as new.

I. Chondrodendron Ruiz & Pavón, Syst. Veg. 261. 1798.

1. Chondrodendron tomentosum Ruiz & Pavón, Syst. Veg. 261. 1798.

Peru: Madre de Dios: Manú, R. B. Foster 5289, 6178, P. J. Barbour 5544.

This is the first record of this species from Madre de Dios.

Distribution

Panama: Panamá, Canal Zone, Darién. Colombia: Chocó, Boyacá, Amazonas, Santander, Comiss. Caquetá. Ecuador: Napo-Pastaza, Oriente. Peru: Amazonas, Loreto, San Martín, Huánuco, Junín, Madre de Dios. Bolivia: La Paz, basin of Río Beni. Brazil: basin of the upper Rio Juruá.

2. Chondrodendron platiphyllum (A. de St. Hilaire) Miers, Ann. Mag. Nat. Hist. III. 19: 122. 1867.

Distribution

Well distributed in southeastern Brazil: Ceará, Rio Grande do Norte, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo.

3. Chondrodendron microphyllum (Eichler) Moldenke in Krukoff & Moldenke, Brittonia 3: 11. 1938.

Distribution

Brazil: Rio Grande do Norte, Bahia.

Fruits were described in Supplement #9.

II. Curarea Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 7. 1971.

1. Curarea toxicofera (Weddell) Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 9. 1971.

Ecuador: Napo: H. V. Pinkley 285. Peru: Loreto: Maynas, A. Gentry 18505, 24991, 25126, 25952, 25991, C. Diaz 1187; San Martín: A. Gentry 25720; Madre de Dios: Manú, R. B. Foster 2543 (F), 6480 (F), A. Gentry 26990; Oserato/Tambo: G. Weiss 132.

These are the first records of the species from Ecuador and from Madre de Dios, Peru.

Distribution

Panama: Canal Zone, Darién. Colombia: Chocó, Amazonas, Vaupés. Ecuador: Napo. Peru: Loreto, Huánuco, Madre de Dios. Bolivia: La Paz (Beni). Brazil: Amazonas (basin of Rios Maués, Negro, Iça, Juruá, Jutai, Javari, and the upper and lower Rio Solimoës), Acre.

2. Curarea candicans (L. C. Richard) Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 12. 1971.

French Guiana: de Granville 3622, A. Fournet 63, 65, 75.

This is the first record of the species from French Guiana.

Distribution

Venezuela: Bolívar. Guyana. Surinam. French Guiana. Brazil: Pará, Amazonas.

3. Curarea tecunarium Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 12. 1971.

Brazil: Rondônia: mata do várzea, J. Ubiratan Santos 218 (frts). Peru: Loreto: Maynas, C. Diaz 1044; Madre de Dios, Al. Gentry 27089.

This is the first record of the species from Rondônia and Madre de Dios.

The above cited collection from Rondônia is in fruit. In our Supplement #8 (Mem. N.Y. Bot. Gard. 22: 14. 1971) we refer to Fuller 86 from Napo-Pastaza, Ecuador which has two old detached drupes but we had no certainty that they belong with the leaves. It is now certain that these fruits and description belong with the specimen.

Distribution

Colombia: Amazonas, Putumayo. Ecuador: Napo-Pastaza. Peru: Loreto, Madre de Dios. Brazil: Rondônia, Amazonas (basin of the upper Rios Negro, Juruá, Purús, Iça, Solimões).

4. Curarea cuatrecasasii Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 14. 1971.

Distribution

Costa Rica: Puntarenas. Colombia: Antioquia.

Staminate flowers are not yet known.

IIA. Cionomene Krukoff, *Phytologia* 41: 241. 1979

1. Cionomene javariensis Krukoff, *Phytologia* 41: 241. 1979.

Distribution

Brazil: Amazonas (basin of Rio Javari).

Fruits and pistillate flowers are not yet known.

III. Sciadotenia Miers, *Ann. Nat. Hist.*
II. 7: 43. 1851.

1. Sciadotenia cayennensis Bentham, *Jour. Linn. Soc. Bot.*
5(Suppl. 2): 51. 1861.

Brazil: Maranhão: basin of Rio Pindaré, J. Jangoux 407.
French Guiana: Moretti 843.

This is the first record of the species for Maranhão.

Distribution

Venezuela: Amazonas. The three Guianas. Brazil:
Maranhão, territory of Amapá, Pará, where found near Belém
and in the basins of Rios Cuminá, Tapajós, and Trombetas.

2. Sciadotenia toxifera Krukoff & A. C. Smith, *Bull. Torrey Club* 66: 308. 1939.

Peru: San Martín: Mariscal Cáceres, J. Schunke V. 10023;
Madre de Dios: Manú, R. B. Foster 3163 (F), 3480 (F), 6170 (F),
A. Gentry 26751, P. J. Barbour 5682.

This is the first record of this species for Madre de Dios.

Distribution

Colombia: Amazonas, Putumayo. Ecuador: Napo-Pastaza.
Peru: Loreto, San Martín, Huánuco, Madre de Dios. Brazil:
Acre, Amazonas (basin of Rios Purús, Juruá, Javari, Solimões).

3. Sciadotenia solimoesana Moldenke in Krukoff & Moldenke, Brittonia 3: 27. 1938.

Distribution

Known from a single locality, Igarapé Belém, upper Rio Solimões, Amazonas, Brazil.

Mature fruits and pistillate flowers not yet known.

4. Sciadotenia paraënsis (Eichler) Diels in Engler, Pflanzenreich 4(94): 86. 1910.

Distribution

Brazil: Territory of Amapá, Territory of Rondônia, Pará (Bragança, Obidos, basin of Rios Guamá, Capim, Tapajos), Amazonas (basin of Rios Jamundá, Maués, and the lower Rio Negro).

5. Sciadotenia sagotiana (Eichler) Diels in Engler, Pflanzenreich 4(94): 86. 1910.

Distribution

Guyana. French Guiana. Brazil: Territory of Amapá, Pará, Amazonas (basin of Rio Negro, Urubú).

6. Sciadotenia eichleriana Moldenke in Krukoff & Moldenke, Brittonia 3: 28. 1938.

Distribution

French Guiana. Brazil: Pará, Amazonas (basin of Rios Negro, Solimões), Mato Grosso (basin of Rio Madeira). Peru: San Martín, Loreto, Huánuco.

- 6a. Sciadotenia peruviana Krukoff & Barneby, Phytologia 39: 284. 1978.

Distribution

Peru: Amazonas.

Staminate inflorescences and flowers not yet known.

7. Sciadotenia sprucei Diels in Engler, Pflanzenreich 4(94): 84. 1910.

Distribution

Brazil: Mato Grosso, Amazonas (basin of Rios Iça, Negro), Pará (basin of Rio Tapajos).

8. Sciadotenia mathiasiana Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 46. 1970.

Distribution

Known only from the type collection from Loreto, Peru.

Staminate flowers not yet known.

9. Sciadotenia brachypoda Diels in Engler, Pflanzenreich 4 (94): 84. 1910.

Distribution

Colombia: Amazonas. Brazil: Acre, Territory of Rondônia, Pará, Amazonas (basin of Rios Purús, Juruá, Negro, Iça, Solimões).

Pistillate inflorescences not seen.

10. Sciadotenia ramiflora Eichler, Flora 47: 395. 1864.

Distribution

Panama: Darién. Colombia: Santander, Meta. Ecuador: Napo. Peru: Loreto. Brazil: Amazonas.

11. Sciadotenia nitida (Riley) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 22. 1971.

Distribution

Panama: Canal Zone, Darién. Colombia: Antioquia, Santander.

12. Sciadotenia amazonica Eichler, Flora 47: 395. 1864 & in Martius, Fl. Bras. 13(1): 201, tab. 47, fig. 3. 1864.

Peru: Loreto: Maynas, A. Gentry 25271, C. Diaz 467.

Distribution

Peru: Loreto. Brazil: Amazonas.

13. Sciadotenia duckei Moldenke in Krukoff & Moldenke, Brittonia 3: 30. 1938.

Distribution

French Guiana. Brazil: Amazonas (lower Rio Negro).

14. Sciadotenia pachnococca Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 24. 1971.

Distribution

Brazil: Amazonas (upper Rio Negro).

Staminate flowers are not yet known.

15. Sciadotenia javariensis Moldenke, Bull. Torrey Bot. Club 78: 260. 1951.

Distribution

Brazil: Amazonas (Rio Javari).

Fruits are not yet known.

16. Sciadotenia pubistaminea (K. Schumann) Diels in Engler, Pflanzenreich 4(94): 85. 1910.

Distribution

Brazil: Bahia, Minas Gerais.

Fruits are not yet known.

17. Sciadotenia acutifolia Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 45. 1970.

Distribution

Brazil: Espírito Santo.

Fruits are not yet known.

- V. Telitoxicum Moldenke in Krukoff & Moldenke
Brittonia 3: 42. 1938

1. Telitoxicum minutiflorum (Diels) Moldenke in Krukoff & Moldenke, Brittonia 3: 49. 1938.

Distribution

Peru: Loreto, San Martín. Brazil: Territories of Amapá and Rondônia, Pará (Rio Xingú), Amazonas (basin of the upper Solimões, Rio Negro), Acre.

2. Telitoxicum duckei (Diels) Moldenke in Krukoff & Moldenke, *Brittonia* 3: 47. 1938.

Peru: Loreto: Maynas, C. Diaz 1027, 1040, 1100.

Distribution

Colombia: Vaupés. Peru: Loreto. French Guiana. Brazil: Pará (Rio Mapuera), Amazonas (upper Rio Negro).

3. Telitoxicum krukovii Moldenke in Krukoff & Moldenke, *Brittonia* 3: 44. 1938.

Peru: Loreto: Maynas, A. Gentry 27969.

Distribution

Surinam. Peru: Loreto, San Martín, Huánuco. Brazil: Amazonas (basin of Rios Madeira, Juruá, Negro and Igarapé Comitán), Pará (basin of Rio Tocantins).

4. Telitoxicum glaziovii Moldenke in Krukoff & Moldenke, *Brittonia* 3: 47. 1938.

Distribution

Brazil: Ceará, Pará (basin of Rios Tapajós, Amazonas proper, Jarí and other regions).

5. Telitoxicum inopinatum Moldenke in Krukoff & Moldenke, *Brittonia* 3: 46. 1938.

Distribution

Guiana (basins of Courantyne, Berbice, Essequibo and Demerara Rivers). Surinam. French Guiana.

6. Telitoxicum peruvianum Moldenke in Krukoff & Moldenke, *Brittonia* 3: 45. 1938.

Distribution

Known only from the type collection in staminate flower from the basin of Río Putumayo, Loreto, Peru.

7. Telitoxicum negroense (Krukoff & Moldenke) Krukoff, *Phytologia* 25: 37. 1972.

Distribution

Brazil: Amazonas (basin of Rio Negro).

Known only in sterile condition.

8. Telitoxicum rodriguesii Krukoff, *Phytologia* 33: 329. 1976.

Distribution

Brazil: Amazonas (basin of Rio Negro).

Flowers are not yet known.

VI. Abuta Barrère ex Aublet, *Pl. Guian.*
1: 618. pl. 250. 1775.

1. Abuta rufescens Aublet, *Hist. Pl. Guian.* 1: 618. pl. 250. 1775.

Peru: Loreto:
Maynas, Ramón Ramírez 93; Huánuco: Leoncio Prado, José Schunke
V. 10202.

Distribution

Venezuela: Táchira, Amazonas, Apuré. Surinam. French Guiana. Colombia: Amazonas. Ecuador: Napo. Peru: Loreto, Huánuco. Brazil: Territory of Amapá, Amazonas (basins of Rios Negro, Solimões, Japurá, Juruá).

3. Abuta convexa (Velloso) Diels in Engler, *Pflanzenreich* 4 (94): 193. 1910.

Distribution

Confined to southeastern Brazil: Minas Gerais, Espírito Santo, Rio de Janeiro, Guanabara.

For description of fruits see Supplement #10.

4. Abuta grisebachii Triana & Planchon, *Ann. Sci. Nat.* IV. 17: 47. 1862.

Distribution

Colombia: Vaupés. Peru: San Martín, Loreto. Brazil: Mato Grosso, Amazonas (basins of Rios Solimões, Negro, Igarapé Camitian), Pará (basin of Rios Xingu and upper Tapajós).

5. Abuta candollei Triana & Planchon, Ann. Sci. Nat. IV. 17: 47. 1862.

Distribution

Venezuela: Bolívar. The three Guianas. Brazil: Territories of Amapá and Roraima, Pará, Amazonas.

6. Abuta aristeguietae Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 21. 1970.

Distribution

Costa Rica: Alajuela, Guanacaste. Venezuela: Maracay, Miranda, Federal District. Ecuador: Azuay. Peru: Junín.

Staminate flowers are not yet known.

7. Abuta steyermarkii (Standley) Standley, Field Mus. Publ. Bot. 23: 156. 1944.

Distribution

Mexico: Chiapas. Belize. Guatemala: Alto Verapaz, Izabal.

Staminate flowers are not yet known.

8. Abuta antioquiana Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 24. 1970.

Distribution

Colombia: Antioquia.

Staminate flowers are not yet known.

9. Abuta pahní (Martius) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 43. 1971.

Peru: Loreto: Maynas, M. J. Balick 1006 (ECON), C. Diaz 1033; Amazonas: Felix Domínguez Pena 119.

Distribution

Venezuela: Mérida, Trujillo, Amazonas. Ecuador: Napo-Pastaza. Peru: Loreto, Huánuco, Junín. Brazil: Acre, Mato Grosso, Amazonas (basin of Rios Madeira, Juruá, Japurá, upper Solimões and upper Negro).

10. Abuta fluminum Krukoff & Barneby, Phytologia 25: 38. 1972.

Distribution

Ecuador: Los Ríos. Peru: San Martín.

11. Abuta barbata Miers, Contr. Bot. 3: 83. 1871.

French Guiana: M. F. Prévost 900.

Distribution

The three Guianas. Brazil: Pará (basin of Rio Tocantins).

12. Abuta mycetandra Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 45. 1971.

Distribution

Venezuela: Bolívar. Peru: Loreto.

Fruits are not yet known.

13. Abuta imene (Martius) Eichler, Flora 47: 389. 1864.

French Guiana: A. Fournet 70. Venezuela: Amazonas: Atures, Otto Huber 1462 (VEN). Brazil: Mato Grosso: Aripuanã, M. Gomes 109 (INPA); Rondônia: J. L. Zarucchi 2813, M. G. Vieira 979. Peru: Madre de Dios: P. J. Barbour 5531.

Specimens from Rondônia and Madre de Dios and also from French Guiana are new records for this species.

Distribution

Colombia: Amazonas (Vaupés). Bolivia: La Paz. Surinam. French Guiana. Brazil: Mato Grosso, Amazonas (upper Rio Juruá), Pará (basins of Rios Trombetas and Tapajós).

14. Abuta selloana Eichler, Flora 47: 389. 1864.

Distribution

Appears to be confined to central and southeastern Brazil: Ceará, Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Santa Catarina.

15. Abuta panurensis Eichler, Flora 47: 390. 1864.

Distribution

Brazil: Amazonas (basins of Rios Negro, Maués, Tocantins, Iça). Peru: San Martín.

16. Abuta solimoesensis Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 18. 1970.

French Guiana: A. Fournet 61. Peru: Loreto: Río Itaya, A. Gentry 18511.

The specimen from French Guiana is a new record for this species.

Distribution

French Guiana. Peru: Huánuco, Loreto. Brazil: Pará (Ipean, Rio Jarí, near Santarém), Amazonas (Igarapé Camitian).

17. Abuta velutina Gleason, Bull. Torrey Bot. Club 58: 361. 1931.

Distribution

Venezuela: Bolívar, basin of Río Orinoco. Brazil: Amazonas (basins of Rios Negro, Solimões), Rondônia. Peru: Huánuco, San Martín.

Staminate flowers are not yet known.

18. Abuta obovata Diels, Notizbl. Bot. Gart. Berlin 13: 29. 1936.

Distribution

Venezuela: Bolívar, Amazonas. Guiana. French Guiana. Brazil: Territory of Amapá, Acre, Amazonas (basins of Rios Negro, Solimões, Urubú).

Fruits were described in Supplement #8.

19. Abuta vaupesensis Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 19. 1970.

Distribution

Colombia: Vaupés.

Fruits are not yet known.

20. Abuta brevifolia Krukoff & Moldenke, Bull. Torrey Bot. Club 69(2): 160. 1942.

Distribution

Brazil: Pará (near Belém, basins of Rios Jarí, Mapuera, Tapajós), Amazonas (basins of Rios Negro, Acre). Venezuela: Amazonas.

21. Abuta sandwithiana Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 18. 1970.

Brazil: Mato Grosso: Aripuanã, M. G. Silva 4773.

Distribution

Surinam. French Guiana. Brazil: Territory of Amapá, Pará (Rio Tapajós), Amazonas (basins of Rios Maués, Madeira, upper Juruá), Acre, Mato Grosso, Territory of Rondônia. Bolivia.

Staminate flowers are not yet known.

- 21a. Abuta chocoënsis Krukoff & Barneby, sp. nov., inter affines meso-Americanas foliorum lamina facie superiori venis primariis secundariisque alte impressis insigniter bullata, facie inferiori inter venas impressa, necnon drupa dense velutino-tomentella insignis.

Woody vine with stem diam. 3" x 1"; branchlets rusty-tomentulose; petioles rather stout, 20-40 mm long, densely velutinous-tomentulose, incrassate at both ends; leaf-blades broadly elliptic or obovate 5-15 x 6.5-13.5 cm, rounded or broadly cuneate at base, emarginate, acute or acuminate at apex, coriaceous, prominently bullate above, prominently venose beneath, 3-plinerved, essentially glabrous above, rusty-pilosulous on primary nerves below, primary and secondary nerves deeply impressed above, very prominent below, the intervenium of upper face intricately reticulate, the larger areoles \pm 0.2 mm diam.; inflorescence ♂ unknown, ♀

from axils of contemporary leaves, the axis \pm 2.5 cm; flower \emptyset not seen, its pedicel in fruit less than 1 cm; drupe obovoid \pm 3 x 2 x 1.5 cm, the exocarp densely velutino-tomentulose, the fibrous mesocarp \pm 0.7 mm thick, the thinly woody endocarp \pm 0.5 mm thick, deeply engraved-venulose externally.

Type locality: Chocó; carretera Panamericana (en construcción), entre Río San Pablo (Pueblo Nuevo) y Las Animas.

Distribution: (two collections); Colombia: Chocó: E. Forero et al. 5807 (April 24, 1979, mature frts) (NY - holotype, MO), A. Gentry et al. 24117 (Jan. 13, 1979) trail to Tubadó, Quibdó-Tutunendo Road, ca 14 km E. of Quibdó, alt. 90 m, mature pluvial forest.

The four species with bullate leaves can be separated by the following key:

1. Leaf-blades 3-plinerved.
 2. Fruit small (\pm 2 cm long, velutinous); Surinam, Brazil (Amapá, Pará, Amazonas, Rondônia), Bolivia A. sandwichiana
 2. Fruit large (\pm 3 cm long), velutinous; Colombia (Chocó) A. chocoënsis
1. Leaf-blades all or mostly 5-plinerved.
 3. Fruit 3-3.5 x 2-2.5 cm, velutinous; Guiana .. A. bullata
 3. Fruit 2 x 1 cm, subglabrous; Brazil (Pará, Amazonas), Peru A. solimoesensis
22. Abuta bullata Moldenke in Krukoff & Moldenke, Brittonia 3: 52. 1938.

French Guiana: ENE Saul, Cremers 6191, A. Fournet 66.

This is the first record of this species from French Guiana.

Distribution

Guiana. French Guiana.

23. Abuta seemanni Triana & Planchon, Ann. Sci. Nat. IV. 17: 50. 1862.

Distribution

Colombia: Chocó, Valle.

Fruits were described in Supplement #8.

24. Abuta racemosa (Thunberg) Triana & Planchon, Ann. Sci. Nat. IV. 17: 48. 1862.

Distribution

Colombia: Santander, Tolima.

25. Abuta panamensis (Standley) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 22. 1970.

Panama: Darién: A. Gentry 28567.

Distribution

From Veracruz and Chiapas, southeastern Mexico, through Belize, Guatemala (Huehuetenango, Quetzaltenango, Retalhuleu, Sololá, Chimaltenango, Sacatepéques, Alta Verapaz, Izabal, Petén), Honduras (Atlántida), Nicaragua (Zelaya), Costa Rica (Alajuela, Cartago, Heredia), Panama (Canal Zone, Darién).

26. Abuta chiapasensis Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 23. 1970.

Distribution

Mexico: Chiapas. Guatemala.

Fruits are described in Supplement #14.

27. Abuta grandifolia (Martius) Sandwith, Kew Bull. 1937: 397. 1937.

Venezuela: Terr. Fed. Amazonas, R. Liesner 8600. French Guiana: near Saül, de Granville 3149, Cremers 6154, A. Fournet 31, 73. Brazil: Pará: Santarém, M. G. A. Lobo 74; Amazonas: Manaus-São Gabriel, Lúcia Alencar 313; Mato Grosso: Aripuanã, M. G. Silva 4768; Territory of Roraima: Ilha de Maracá, N. A. Rosa 3052. Ecuador: Napo: R. B. Foster 3817 (Río Yasuní), W. T. Vickers 221 (Río Aguatico), M. Shemluck 167 (F) (Río Pastaza). Peru: Loreto: A. Gentry 18964, M. Rimachi Y. 3020 (F); Madre de Dios: Manú, R. B. Foster 3239, A. Gentry 26749.

This is the first record of this species from Madre de Dios.

Distribution

The most frequently collected of American *Triclisieae* and *Anomospermeae*. It also has a very extensive range: Venezuela (Bolívar and Amazonas), the three Guianas, Colombia (Cauca, Putumayo, Caquetá, Vaupés, Meta and Amazonas), Ecuador (Napo and Napo-Pastaza), Peru (Loreto, San Martín, Madre de Dios, and Huánuco), Bolivia (basin of Río Beni, Larecaja, La Paz). It is common and very widely distributed in Brazilian Amazonia: Territory of Amapá (basins of Rios Oiapoque, Jarí and Araguari), Pará (basins of Rios Amazonas proper, Tapajós, Tocantins, Trombetas, and many other localities), Amazonas (basins of Rios Solimões, Juruá, Purús, Madeira, Tonantins, Iça, Urubú, and Negro); territories of Roraima and Rondônia, Acre and Mato Grosso. Outside of Amazonia it has been collected in the Brazilian states of Maranhão, Ceará, and Goiás.

28. Abuta colombiana Moldenke in Krukoff & Moldenke, *Brittonia* 3: 58. 1938.

Distribution

Colombia: Chocó, Valle.

29. Abuta dwyerana Krukoff & Barneby, *Mem. N.Y. Bot. Gard.* 20(2): 73. 1970.

Distribution

Costa Rica: Cartago. Panama: Colón, Panama, Darién.

Staminate flowers are not yet known.

30. Abuta longa Krukoff & Barneby, *Mem. N.Y. Bot. Gard.* 20(2): 21. 1970.

Distribution

Venezuela: Miranda, Federal District, Delta Amacuro.

Staminate flowers are not yet known.

- VII. Caryomene Barneby & Krukoff, *Mem. N.Y. Bot. Gard.* 22(2): 52. 1971.

1. Caryomene prumoides Barneby & Krukoff, *Mem. N.Y. Bot. Gard.* 22(2): 55. 1971.

Distribution

Bolivia: basin of Río Abuná. Brazil: Amazonas (basin of Rio Solimões).

Flowers (staminate and pistillate) are not yet known.

2. Caryomene glaucescens (Moldenke) Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 56. 1971.

French Guiana: A. Fournet 86.

This is the first record of this species from French Guiana.

Distribution

Brazil: Pará (basin of Rio Tocantins). French Guiana.

Flowers (staminate and pistillate) are not yet known.

3. Caryomene olivascens Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 57. 1971.

Distribution

French Guiana. Brazil: Pará (basin of Rio Jarí).

Staminate flowers are not yet known.

4. Caryomene foveolata Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 60. 1971.

Distribution

Brazil: Pará (basin of Rio Tapajós).

Flowers are not yet known.

5. Caryomene grandifolia Barneby & Krukoff, Phytologia 41: 247. 1979.

Distribution

Peru: Loreto. Brazil: Amazonas (basins of Rios Negro, Maués).

Pistillate flowers and fruits are not yet known.

VIII. Anomospermum Miers, Ann. Nat. Hist.

III. 14: 101. 1864.

- 1.
- Anomospermum grandifolium
- Eichler, Flora 47: 388. 1864.

Peru: Madre de Dios: Manú, R. B. Foster 6141, A. Gentry 26991, 27037.

This is the first record of the species from Madre de Dios.

Distribution

Guyana. Brazil: Pará, Amazonas, Acre. Colombia: Chocó. Ecuador: Napo-Pastaza. Peru: Madre de Dios, Loreto, Huánuco, San Martín. Bolivia (Pando). It is widely distributed in Brazil. In the state of Pará it has been collected in the basins of Rios Amazonas and Trombetas, in the state of Amazonas in the basins of Rios Solimões (Igarapés Belem, Jandiatuba, and Comitian), Negro and upper Juruá, in the state of Acre in the basins of Rios Juruá and Purús.

- 2.
- Anomospermum solimoesanum
- (Moldenke) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 65. 1971.

Distribution

Brazil: Amazonas (basins of Rios Solimões and Negro), Rondônia.

- 3.
- Anomospermum bolivianum
- Krukoff & Moldenke ex Moldenke, Lilloa 5: 234. 1940.

Brazil: Pará: Rio Tocantins, M. G. Silva 3609.

The above cited collection was misidentified as A. reticulatum (Mart.) Eichler ssp. reticulatum in Supplement #15 (Phytologia 44: 15. 1979).

Distribution

Bolivia: La Paz. Peru: Huánuco. Brazil: Territory of Amapá, Pará (basins of Rios Tapajós and Tocantins), Mato Grosso.

- 4a.
- Anomospermum chloranthum
- Diels ssp.
- chloranthum
- , Mem. N.Y. Bot. Gard. 22(2): 68. 1971.

Distribution

French Guiana. Western Venezuela (Mérida). Brazil: Amazonas, Acre. Peru: Huánuco, Junín, Loreto. Bolivia: Yungas.

- 4b. Anomospermum chloranthum Diels ssp. confusum Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 69. 1971.

Peru: Madre de Dios: Manú, R. B. Foster 6332. French Guiana: de Granville 3663, A. Fournet 79.

This is the first record of this species from Madre de Dios.

Distribution

Colombia: Amazonas. Peru: Loreto, Huánuco, Madre de Dios. French Guiana. Brazil: Pará, Amazonas.

- 4c. Anomospermum chloranthum Diels ssp. isthmicola Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 70. 1971.

Distribution

Panama. Colombia: Antioquia, Chocó.

- 4d. Anomospermum chloranthum Diels ssp. pacificum Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 70. 1971.

Ecuador: Pichincha: Pacific slope W of Quito, 530 m, C. H. Dodson 10353.

This is the first record of the species from Ecuador.

Distribution

Colombia: Nariño. Ecuador: Azuay, Pichincha.

- 4e. Anomospermum chloranthum Diels ssp. asplundii Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 71. 1971.

Distribution

Ecuador: Napo-Pastaza.

- 4f. Anomospermum chloranthum Diels ssp. occidentale (Cuatrecasas) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 71. 1971.

Distribution

Colombia: Valle.

Flowers (staminate and pistillate) not yet known.

- 5a. Anomospermum reticulatum (Martius) Eichler ssp. reticulatum
Mem. N.Y. Bot. Gard. 22(2): 73. 1971.

Peru: Madre de Dios: Manú, R. B. Foster 6336 (F).

This is the first record of the species from Madre de Dios.

Distribution

Venezuela: Amazonas, Delta Amacuro. Colombia: Amazonas.
Peru: Madre de Dios. Brazil: widely distributed, usually on várzea land, through Pará, Amazonas, Acre, Mato Grosso, and territories Roraima and Rondônia. In the state of Pará collected in the basins of Rios Amazonas proper, Xingú, Tapajós, Jamundá, Trombetas, Cuminá-Mirím, Tajapurú and in many other localities; in the state of Amazonas in the basins of the upper Rio Solimões and Rios Iça, Tonantins, Japurá, Negro, Igarapé Jandiatuba, Juruá, and Madeira.

- 5b. Anomospermum reticulatum (Martius) Eichler ssp. dielsianum
(Moldenke) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2):
74. 1971.

Brazil: Rondônia: J. Ubiratan Santos 191.

Distribution

Panama: Darién. Peru: Huánuco. Brazil: Acre, territory of Rondônia, Amazonas (basins of upper Rio Negro, Rio Solimões).

- 5c. Anomospermum reticulatum (Martius) Eichler ssp. glabrescens
Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 74. 1971.

Distribution

Panama: Darién. Venezuela: Zulia, Táchira.

Flowers (staminate and pistillate) not yet known.

- 5d. Anomospermum reticulatum (Martius) Eichler ssp. idroboi
Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 75. 1971.

Distribution

Costa Rica: Alajuela. Panama: Chiriquí, Coclé, Colón.
Colombia: Meta (Cordillera La Macarena).

Flowers (staminate and pistillate) are not yet known.

- 5e. Anomospermum reticulatum (Martius) Eichler ssp. nitidum (Miers) Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 75. 1971.

Distribution

Brazil: Rio de Janeiro, São Paulo.

- 5f. Anomospermum reticulatum (Martius) Eichler ssp. venezuelense Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 76. 1971.

Distribution

Venezuela: Miranda, Maracuy.

Staminate flowers are not yet known.

- 5g. Anomospermum reticulatum (Martius) Eichler ssp. allenii Krukoff & Barneby, Mem. N.Y. Bot. Gard. 22(2): 77. 1971.

Distribution

Panama: Coclé. Colombia. Chocó, Valle.

Staminate flowers are not yet known.

6. Anomospermum steyermarkii Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20(2): 30. 1970.

Distribution

Venezuela: Bolívar. Brazil: Territories of Amapá and Roraima, Amazonas (basin of Rio Negro).

Staminate flowers are not yet known.

7. Anomospermum matogrossense Krukoff & Barneby, Mem. N.Y. Bot. Gard. 20: 33. 1970.

Distribution

Brazil: Pará (Alto Tapajós), Mato Grosso, territory of Rondônia.

8. Anomospermum andersonii Krukoff, Phytologia 41: 250. 1979.

Distribution

Brazil: Pará (basin of Rio Tapajós), Amazonas (basin of Rio Solimões). Peru: San Martín, Loreto.

IX. Orthomene Barneby & Krukoff, Mem. N.Y.
Bot. Gard. 22(2): 79. 1971.

1. Orthomene schomburgkii (Miers) Barneby & Krukoff, Mem. N.Y.
Bot. Gard. 22(2): 80. 1971.

Venezuela: Terr. Federal Amazonas, R. L. Liesner 7171.
Colombia: Antioquia: W. S. Alverson 34. Ecuador: Napo:
R. B. Foster 3864. Peru: Loreto: Maynas, Christopher Davidse
9930; Madre de Dios: Manú, A. Gentry 27141.

This is the first record of the species from Ecuador.

Distribution

The most frequently collected species of the genus and also the most widespread. Collected in Trinidad, Venezuela (Delta Amacuro, Bolívar and Amazonas), the three Guianas, Ecuador (Napo), Peru (Madre de Dios, Loreto, San Martín and Huánuco), Colombia (Chocó, Antioquia, Amazonas-Vaupés, Caquetá, and Putumayo), Bolivia (basin of Río Beni, La Paz), and Brazil. In Brazil it has been collected in the territories of Amapá and Rondônia, Pará, Amazonas, Acre, Mato Grosso, Ceará, Pernambuco, Bahia, Goiás, Minas Gerais, Espírito Santo and Rio de Janeiro.

2. Orthomene verruculosa (Krukoff & Barneby) Barneby & Krukoff, Mem. N.Y. Bot. Gard. 22(2): 81. 1971.

Distribution

Colombia: Vaupés.

Staminate flowers are not yet known.

3. Orthomene hirsuta (Krukoff & Moldenke) Barneby & Krukoff,
Mem. N.Y. Bot. Gard. 22(2): 81. 1971.

Distribution

Brazil: Amazonas (basins of Rios Negro, Solimões), Pará.

4. Orthomene prancei Barneby & Krukoff, Mem. N.Y. Bot. Gard.
22(2): 81. 1971.

Distribution

Brazil: Amazonas (basin of Rio Urubú).

Flowers (staminate and pistillate) are not yet known.

X. Elephantomene Barneby & Krukoff, *Lloydia*
37: 27. 1974.

1. Elephantomene eburnea Barneby & Krukoff, *Lloydia* 37: 28. 1974.

Distribution

French Guiana.

Flowers (staminate and pistillate) are not yet known.

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 - 6.
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 - Krukoff, B. A., & Barneby, R. C. 1970. Supplementary notes on American Menispermaceae--VI. *Mem. NY Bot. Garden* 20 (2): 1-70.
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14. " " " . 1978. Supplementary notes on American Menispermaceae--XIII. Neotropical Triclisieae & Anomospermeae *Phytologia* 39: 283-293.
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List of Exsiccatae

The first list of Exsiccatae covering papers on Menispermaceae including Supplement VIII was published in Mem. NY Bot. Gard. 22: 1-89. 1971, the second list covering Supplements IX, X, and XI in Phytologia 33: 337-340. 1976, the third covering Supplements XII and XIII in Phytologia 39: 292-293. 1978, the fourth list covering Supplement XIV in Phytologia 41: 254-255. 1979, and the fifth list covering Supplement XV in Phytologia 44: 17-18. 1979, the sixth list covering Supplement XVI in Phytologia 46: 86. 1980. This list covers Supplement XVII. Only numbered collections and those of which the dates of collection are recorded have been listed. If a collector gathered his collection together with others, only his name is cited in this list. Collections with Prance's numbers are cited under Prance.

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